S.N. 10/678,694
Art Unit: 2828

IN THE CLAIMS

1. (Currently Amended) A ~~monolithic, side pumped, passively Q-switched,~~ solid-state laser comprising a freestanding laser resonator composite structure comprised of a laser gain medium optically contacting a passive Q-switch, wherein the composite structure comprises end faces forming a linear optical path resonant cavity therebetween, the end faces comprising at least partially reflecting coatings deposited thereon, the gain medium comprising a side face for receiving pump light.

2. (Currently Amended) The solid-state laser as in claim 1, ~~where the pump light is generated by~~further comprising a laser diode array for generating the pump light.

3. (Currently Amended) The solid-state laser as in claim 1, ~~where the pump light is generated by~~ further comprising a flashlamp for generating the pump light.

4. (Previously Presented) The solid-state laser as in claim 1, wherein the end faces comprise resonator mirrors and where the at least partially reflecting coatings are deposited on the resonator mirrors.

5. (Original) The solid-state laser as in claim 1, further comprising a non-linear optical material optically coupled to the composite structure.

6. (Original) The solid-state laser as in claim 5, where an intra-cavity portion of the resonant cavity comprises the non-linear optical material.

7. (Previously Presented) The solid-state laser as in claim 5, where a portion of the laser external to the resonant cavity comprises the non-linear optical material.

8. (Original) The solid-state laser as in claim 5, where the non-liner optical material comprises one of: a frequency doubling crystal, a Raman crystal and an optical parametric oscillator.

9. (Original) The solid-state laser as in claim 1, where the laser gain medium comprises one of Nd:YAG, Nd:YVO_4, Er:YAG, Er:Glass, Ho:YAG and Tm:YAG.

10. (Original) The solid-state laser as in claim 1, where the passive Q-switch comprises Cr:YAG.

11. (Original) The solid-state laser as in claim 1, comprising means for thermally induced aberration compensation.

12. (Original) The solid-state laser as in claim 11, where the means for compensation comprises a tilt in at least one of the end faces.

13. (Previously Presented) The solid-state laser as in claim 11, where the means for compensation comprises a Porro prism oriented as to compensate for thermal gradients.

14-24 (Canceled)

25. (Currently Amended) A solid-state laser comprising a laser resonator composite structure comprised of a laser gain medium, wherein the composite structure comprises at least two surfaces forming a linear optical path resonant cavity therebetween, and at least one surface of the at least two surfaces is adapted for thermal aberration compensation to compensate for aberration induced by a unidirectional thermal gradient.

26. (Original) The solid-state laser of claim 25, where the composite structure comprises a passive Q-switch.

27. (Original) The solid-state laser of claim 25, where the at least one surface comprises a tilt.

28. (Original) The solid-state laser of claim 27, where the tilt comprises an angle of about 180 μRad.

29. (Previously Presented) The solid-state laser of claim 25, where the at least one surface comprises a Porro prism oriented as to compensate for thermal gradients.

30. (Original) The solid-state laser of claim 25, where the laser comprises a monolithic laser.

31. (Original) The solid-state laser of claim 25, where the composite structure is adapted for receiving pump light from at least one of a side and an end.

32. (Original) The solid-state laser of claim 25, where the gain medium comprises a saturable absorber material.

33. (Original) The solid-state laser of claim 25, further comprising a non-linear optical material optically coupled to the composite structure.

34. (Previously presented) The solid state laser as in claim 1, wherein said end faces forming said linear optical path resonant cavity therebetween are each disposed at least substantially parallel at an orthogonal angle about zero degrees relative to a longitudinal axis defined by said linear optical path resonant cavity.

35. (Canceled)

36. (Previously presented) The solid state laser of claim 25, wherein said at least two surfaces forming said linear optical path resonant cavity therebetween are each disposed at least substantially parallel at an orthogonal angle about zero degrees relative to a longitudinal axis defined by said linear optical path resonant cavity.

37. (Previously Presented) The solid-state laser as in claim 1, wherein the composite structure is formed as a monolithic block structure.

38. (Currently Amended) The solid-state laser as in claim 1, further comprising a bonding material for bonding~~wherein~~ the laser gain medium and passive Q-switch~~ are bonded~~ together.

39. (New) The solid-state laser as in claim 1, where the laser gain medium is crystalline.

40. (New) The solid-state laser as in claim 39, where the laser gain medium comprises one of Nd:YAG, Nd:YVO_4, Er:YAG, Ho:YAG and Tm:YAG.

41. (New) The solid state laser as in claim 1, further comprising a block having a recess for receiving the freestanding laser resonator composite structure, wherein the freestanding laser resonator composite structure resides within the recess.